



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/365,356	07/30/1999	TONGBI JIANG	660073.774	1684

27076 7590 09/11/2002

DORSEY & WHITNEY LLP
INTELLECTUAL PROPERTY DEPARTMENT
SUITE 3400
1420 FIFTH AVENUE
SEATTLE, WA 98101

EXAMINER

BEREZNY, NEMA O

ART UNIT	PAPER NUMBER
----------	--------------

2813

DATE MAILED: 09/11/2002

22

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/365,356

Applicant(s)

JIANG, TONGBI

Examiner

Nema O Berezny

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-15, 17, 18, 38-45 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 17, 18 and 38-45, 50-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steve Arterberry on Aug. 14, 2002.

nB
11/13/02 ✓ The application has been amended as follows:

✓ Claims 1, 11, 38, and 42: after "with a first adhesive layer disposed on a first surface of the opposing surfaces of the carrier layer to adhere the," delete "semiconductor die" and insert --carrier layer-- thereto.

Claim Rejections - 35 USC § 112

The rejection of claims 10 and 44 under 35 USC 112, first paragraph made in prior Office Action is hereby withdrawn, subsequent to corrections made by Applicant in Amendment F, filed 7-25-02.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-15, 17-18, 38-45, and 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell (6,169,328) in view of Chan et al. (5,461,255). Mitchell discloses a semiconductor device package, comprising: a semiconductor die (Fig.1 el.120) having a bond pad (el.130) on a first surface; and a flexible organic interposer having a die attach surface and an external surface opposite the die attach surface (el.100; col.4 lines 58-67), with an electrical interconnect (el.150) coupled to the bond pad of the die and to an external terminal (el.140) or a solder ball (Fig.1 no #) on the interposer external surface (Fig.1). Mitchell also discloses a plurality of strips (Fig.4B el.110) of single layer adhesive, compliant, elastomeric film (col.5 lines 1-6; col.6 lines 26-33) disposed in between the die and interposer to adhere the die to the interposer die attach surface. Mitchell also discloses an encapsulating material, substantially filling the regions remaining in between the die and the interposer (Fig.2 el.170). Mitchell discloses using a plurality of strips of adhesive film, comprising: a first and second adhesive layer adhered to a carrier layer, and laminating said strips to either the interposer or to the chip (col.9 lines 54-58).

However, Mitchell does not disclose a plurality of strips of compliant adhesive film extending the entire distance between a first pair of opposed lateral edges of the die. Chan discloses a plurality of strips of double sided adhesive tape, comprising a carrier layer and two adhesive layers on opposite sides of said carrier layer, that extend substantially the length of the die (Fig.3; col.3 line 62 – col.4 line 4; col.4 lines 20-29).

Art Unit: 2813

Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the plurality of adhesive strips of Chan with the semiconductor package of Mitchell in order to provide additional adhesion of the die to the interposer, but still allow independent expansion and contraction of the strips.

Examiner takes Official Notice that multiple layers of a carrier layer such as polyimide is conventionally used in the semiconductor industry for the purpose of providing multiple properties and therefore multiple advantages in a double-sided adhesive tape, and would have been obvious to a person skilled in the art at the time of the invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2813

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (703) 305-3445. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NB

August 27, 2002



OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800